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## MERCUR WILDLIFE IMPACT MITIGATION PLAN

### STATEMENT OF POLICY

Mercur Mine management recognizes the importance of protecting the quality of our air, water, land and other natural resources. Mercur Mine policy is that conduct of its normal operations will result in the reasonable protection of the environment and specifically wildlife resources, and in compliance with all federal, state and local government environmental regulations.

### BASELINE WILDLIFE SPECIES LISTS

Studies conducted in and around the Mercur area during 1980-1981 by Mariah Associates identified a variety of mammals, birds, and reptiles which inhabit the vicinity (see Baseline Wildlife Studies Final Report, June 1981). These species are listed in the following tables and represent the potential wildlife resources of the Mercur Mine properties.

#### MAMMALIAN SPECIES LIST

Nuttall's cottontail	Black-tailed jackrabbit
Least chipmunk	Cliff chipmunk
Uinta chipmunk	Rock squirrel
Long-tailed pocket mouse	Ord's kangaroo rat
Deer mouse	Southern red-backed vole
Meadow vole	Porcupine
Coyote	Red fox
Long-tailed weasel	Badger
Mountain lion	Bobcat
Mule deer	Elk

#### REPTILE SPECIES LIST

Western collared lizard	Great Basin sagebrush lizard
Short-horned lizard	Great Basin whiptail
Gopher snake	Great Basin rattlesnake

#### AVIFAUNA SPECIES LIST

Turkey vulture	Coopers hawk
Red-tailed hawk	Rough-legged hawk
Ferruginous hawk	Golden eagle
Bald eagle	Marsh hawk
Prairie falcon	American kestrel
Blue grouse	Chukar
Mourning Dove	Great horned owl
Common nighthawk	Broad-tailed hummingbird

Common flicker  
Dusky flycatcher  
Horned lark  
Rough-winged swallow  
Scrub jay  
Common raven  
Clarks nutcracker  
Mountain chickadee  
Bushtit  
House wren  
Rock wren  
American robin  
Mountain bluebird  
Blue-gray gnatcatcher  
Warbling vireo  
Yellow warbler  
Macgillivrays warbler  
Brewers blackbird

Western kingbird  
Western flycatcher  
Violet-green swallow  
Stellers jay  
Black-billed magpie  
Pinyon jay  
Black-capped chickadee  
Plain titmouse  
Red-breasted nuthatch  
Canyon wren  
Sage thrasher  
Hermit thrush  
Townsend's solitaire  
Loggerhead shrike  
Virginias warbler  
Black-throated gray warbler  
Western meadowlark  
Brown-headed cowbird

#### IMPACTS OF MODIFICATION OF VEGETATION

The potential impact of vegetation removal during development varies with location. Vegetation removal in the mill, mine, and dump areas south of the Mercur Road will have relatively reduced impact because much of this area was disturbed by previous mining operations. The wildlife in this area will be displaced. Mule deer and mammalian predators will move to undisturbed areas nearby. The mule deer summer range so disturbed is not critical. Relatively few upland game birds occur in these areas so impacts should be slight. The small mammal prey base for raptors will also be reduced.

Removal of vegetation in the mine and tailings pond area will eliminate some nesting sites used by Cooper's hawks, Red-tailed hawks and other species which nest on the ground or in mixed-brush vegetation types. This will have a locally significant impact on these species but an overall moderate impact on passerine and other birds.

#### IMPACTS OF TOPOGRAPHIC CHANGES

Overall, impacts on wildlife due to topographic changes are considered to be slight. During operations, wildlife will likely not be near the topographically disturbed areas. The artificial slopes and flat surfaces will reduce cover associated with the pre-mining topography.

#### IMPACTS DUE TO NOISE AND GROUND SHOCK

The most common wildlife responses to noise and ground shock are avoidance or accomodation. Most species will avoid areas where these effects are not tolerable such as near blasting areas. Many species are likely to accomodate steady noise such as which occurs at haul roads, dumps, and mill areas. The overall impact on most species is expected to be slight.

## IMPACTS OF WATER SUPPLY ALTERATIONS

Wildlife water sources are an essential component of habitat. None of the perennial water sources in the project area will be disturbed by the proposed development. Ephemeral water sources in the tailings pond, mill and mine/dump areas will be disturbed. However, this impact will occur in the same area as the modification of vegetation discussed previously.

## DIRECT WILDLIFE MORTALITY

Small mammals, reptiles and young birds that occur in the areas to be disturbed, and are not able to avoid the effects of the operations, will likely be killed. This mortality impact is locally significant, but most of these species reproduce rapidly and the effects of this impact on surrounding undisturbed habitat are minimal.

Another source of direct mortality will be vehicle-wildlife collisions. The primary concern will be for mule deer on the winter range in Mercur Canyon and along State Highway #73. Increased traffic volume on these routes will be caused by the operations and this will likely result in more frequent vehicle-deer collisions.

Any attempts by wildlife to use potentially dangerous areas as the active open pit areas and the tailings water could result in their being harmed. The tailings pond is not likely to have any wildlife impacts due to toxicity but the soft margins of the settled pond solids could mire deer attempting to reach the water pool. Few waterfowl occur in the Mercur area so few, if any, ducks or geese will be exposed to the tailings water. Bald eagles are not expected in the tailings pond area since no food should be present for them and the human presence will further deter them.

## IMPACTS DUE TO INCREASED HUMAN CONTACTS

Increased human activity in the general Mercur area will result from the development and will pose some potential impact on wildlife. Most wildlife will avoid human contact by moving away. The distance they move away depends upon the intensity and duration of human activity, cover, topography, weather, animal species, and the previous experience of the animals. This avoidance reaction increases the habitat rendered less suitable for wildlife. Increased human activity in the vicinity of active raptor nests could result in nest abandonment and nestling mortality. Disturbance of the bald eagles at their winter roost sites in the Ophir drainage could be a significant undesirable impact.

Another potential adverse impact is deliberate harassment and/or poaching of wildlife by employees. This may occur as some species of wildlife become habituated to the development after a routine has been established. These animals will use habitat adjacent to the operations and thus be more exposed to harassment or poaching. Raptors may use nearby transmission line poles as hunting perches and become easy targets.

For security and safety reasons, the development will reduce the historic hunting opportunities in the Mercur area by restricting access. This will be perceived by the hunting public as a negative impact despite the fact that the restricted land is privately owned. The possible use of company land by deer as a sanctuary during the hunting season could increase the likelihood of harm to the deer by operations and draw the attention of hunters.

## REDUCTION AND MITIGATION OF IMPACTS

A variety of adverse impacts to wildlife will occur due to the Mercur Mine operations. Mitigating measures are not possible for all impacts but realistic reduction of impact is possible in some areas. In accordance to company policy, the mitigation of wildlife impacts should be a cooperative endeavor between mine management and federal, state and local agencies.

## MITIGATION OF VEGETATION IMPACTS

The reclamation plan for the Mercur Mine has been prepared in compliance with state and federal requirements. The post-mining land use set out in that plan is to provide for grazing, wildlife and general low-level recreational use. To achieve this use, the majority of the disturbed ground will be cleared of equipment and facilities, regraded as needed, and revegetated.

The revegetation plan includes a diverse selection of native and introduced species of grasses, forbs, and woody plants. At the time of reclamation, species and planting techniques will be selected to stabilize the ground, and establish a source of vegetation for grazing, browse, and cover.

Successful reclamation will produce a grass and forb vegetative cover within 2-3 years which will be repopulated by small mammals and passerine birds. Although the diversity of these species will initially be low they will provide a prey base for raptors and mammalian predators.

Shrubs will be planted in clumps on the revegetated areas to provide browse and cover.

The potential future impact of vegetation removal in the tailings pond area on the Cooper's hawks known to nest there will be mitigated by pre-construction raptor nest surveys in early spring. If active nests are discovered within areas scheduled for disturbance consultation with the U.S. Fish and Wildlife Service will be initiated. If the nests will prevent construction activities from occurring, the Fish and Wildlife Service will be requested to move them with the assistance of Mercur Mine Personnel.

During operations, numerous temporary use roads and drillpads will be opened within the existing mixed shrub community. Those roads and drillpads not scheduled for future disturbance by operations will be reclaimed. This reclamation will include water bars, ripping and seeding with a species mixture of grass and forbes. This action will provide habitat diversity and open areas within this deer habitat.

## MITIGATION OF TOPOGRAPHIC CHANGES

Most of the topographic changes caused by operations will be permanent. A number of deep gulches will be filled and it is not possible to restore the original topography following operations.

This loss in cover will be partially mitigated by replanting shrubs on the open surfaces during reclamation and by leaving some rock piles on the reclaimed surfaces.

The open pit area will not be reclaimed and will continue to be unacceptable habitat for many species following cessation of operations. The rocky walls and slopes of the pit could provide raptor nesting and hunting roost habitat and the pit margins may provide cover for small mammals.

## MITIGATION OF WATER SUPPLY ALTERATIONS

Although the existing perennial water sources are not expected to be disturbed, efforts will be taken to provide additional drinking water sources in the Mercur area. Priority will be given to providing water during the summer and fall seasons. By improving the availability of water, the deer habitat in the area adjacent to operations will be improved. This will partially offset the loss of habitat in the operations areas as well as other impacts that cannot be mitigated. Providing strategically located water sources will also tend to draw deer away from the operations areas thus reducing potential contacts with humans and operations. This action will help to mitigate the impacts of humans and mortality due to operations.

Sites where specific actions may be taken are proposed as follows:

1. Rover Flat Spring, NW $\frac{1}{4}$  NE $\frac{1}{4}$ , Sec. 6, T6S, R3W

This is a collapsed tunnel of Rover Mining Co. with a diligence water right of 0.044 cfs controlled by Leo H. Ault since 1960. The present perennial flow drains into a pond formed by a man-made embankment. If permission of Mr. Ault is received, this pond should be drained and cleaned. The spring itself should be carefully cleaned and fenced.

2. Sparrow Hawk Spring, SE $\frac{1}{4}$ , SE $\frac{1}{4}$ , Sec. 30, T5S, R3W

This is a collapsed tunnel of the Geyser-Marion Gold Mining Co. with a diligence water right of 0.067 cfs controlled by Mervin J. Russell. The present perennial flow runs down a steep, muddy channel and eventually drains into the ground. If permission of Mr. Russell is received this spring could be cleaned and fenced. The water should be piped down to a location where the water could be collected in a drainage collection pit.

3. Combined Metals Tunnel, SE $\frac{1}{4}$ , SW $\frac{1}{4}$ , Sec. 32, T5S, R3W

This is a collapsed tunnel with an old water right of .011 cfs. This spring is severely trampled and flow is seasonal. By cleaning and fencing the spring the flow could possibly be made perennial. A drainage collection pit may be provided to collect the flow.

4. Manning Canyon, SW $\frac{1}{4}$ , NW $\frac{1}{4}$ , Sec. 9, T6S, R3W

There presently is no perennial water source in this area. It would be feasible to run a plastic pipeline from the main water tank above the mill to drip into a sealed pond. A preferred action would be the installation of a guzzler in this location.

5. Rover Hill, NE $\frac{1}{4}$ , NE $\frac{1}{4}$ , Sec. 36, T6S, R4W

There presently is no perennial water source in this area. A guzzler could be installed.

6. Eagle Hill, NE $\frac{1}{4}$ , NE $\frac{1}{4}$ , Sec. 18, T6S, R3W

There is presently no perennial water source in this area. A guzzler could be installed.

7. U.W. Mine Shaft, SE $\frac{1}{4}$ , SW $\frac{1}{4}$ , Sec. 4, T6S, R3W

This is an old mine entry presently controlled by the Raddatz Estate. The records show a W.U.C. number of 81 with a right of 0.001 cfs for this source. Nothing else is known about it. It could be investigated further to see if it could be improved.

#### MITIGATION OF DIRECT WILDLIFE MORTALITY

Employees of the Mercur Mine will receive in their training instructions to report any wildlife incursions into operation areas. The project environmental staff will be responsible for notifying the DWR and FWS immediately and requesting their aid in responding to any wildlife/operations conflicts. Wildlife mortality caused by operations will be investigated and corrective actions recommended by the DWR.

The tailings pond will be completely enclosed by a fence designed according to State Division of Wildlife Resources (DWR) recommendations to keep big game out of the tailings pond. Any deer that happen to get inside the fence will be controlled and removed with assistance by DWR. Any use of the tailings pond by waterfowl or raptors will be monitored and if this becomes a problem mitigative measures will be discussed with FWS.

Mitigation of deer mortality due to collisions with vehicles will be difficult. Deer road kills in Mercur Canyon will be reduced by enforcing the 35 MPH speed limit. Employees will be reminded during the winter months to reduce driving speed after dark and be alert to potential collisions with deer. Deer warning signs will be placed along the Mercur Canyon road.

## MITIGATION OF IMPACTS DUE TO HUMAN CONTACT

All employees will be instructed to comply with all state and federal wildlife protection statutes. Possession of firearms on company property or in company vehicles will be forbidden. Travel within company property will be restricted to job related activities and the general public will be excluded from company property. Only those members of the public having property or commercial interest within or adjacent to the company security perimeter will be allowed through the gates. By these actions the company will prevent poaching and harassment of wildlife by its employees.

Employees will be encouraged to help the company environmental staff monitor any poaching or harassment of wildlife. Any information concerning poaching or harassment of wildlife will be reported to the DWR. Employees' observations of wildlife activities within operation areas will also be used to mitigate potential impacts. Professional biologists will be used to observe raptor activities in the vicinity so that potential operational impacts on nesting or roosting sites will be identified. Any such impacts will be discussed with the FWS and DWR.

To prevent conflicts between hawk nesting and company operations, the FWS and DWR will be consulted to help locate alternate nesting sites. The company will provide artificial nesting platforms in those locations.

If the deer sanctuary effect of closing company lands to hunting becomes a problem, the DWR will be consulted to recommend appropriate mitigation plans.

To prevent any potential for disturbance of the eagle roosts in Ophir Canyon, the company will follow the recommendations made previously by FWS, which limit periods of operations in the Canyon. The other mitigation techniques discussed above, will minimize impacts due to human contacts.